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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/764,264 | 01/23/2004 | Armin Tilke | 1890-0049 | 6182 |

7590 04/22/2005

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Suite 3000
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EXAMINER

WILSON, SCOTT R

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2826

DATE MAILED: 04/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/764,264 | Applicant(s) TILKE ET AL. | |
| | Examiner Scott R. Wilson | Art Unit 2826 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some c) ☒ None of: _____
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>9/13/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 11- 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Imai. Imai, Figure 3F, discloses a bipolar transistor comprising: a semiconductor substrate (41), (42) and (43) (col. 5, lines 35-43), a base-terminal layer (47)(col. 5, lines 66-67) arranged on the semiconductor substrate, a further recess (Figure 3E, element 49)(col. 6, lines 5-6) extending through the base-terminal layer into the semiconductor substrate (43); a first spacing layer (50)(col. 7, line 3) arranged on walls of the further recess, a base layer (53)(col. 8, line 27) arranged in the further recess; a second spacing layer (54)(col. 7, line 3) which is arranged on the first spacing layer and the base layer and specifies a planar terminal pad on the base layer, and an emitter layer (55)(col. 7, line 8) arranged on the planar terminal pad.

As to claim 12, Imai, Figure 3F, discloses that the first spacing layer (50) is formed to separate the base layer (53) from the base-terminal layer (47) in a wall area of the further recess.

As to claim 13, Imai discloses (col. 5, lines 66-67) that the base-terminal layer (47) is a doped polysilicon.

As to claim 14, Imai, Figure 3F, discloses that the further recess (Fig. 3E, element 49) comprises an area which is arranged underneath the base-terminal layer (47).

As to claim 15, Imai discloses that the base layer and the base-terminal layer are conductively connected essentially by means of a dopant diffused out of the base-terminal layer (52a)(col. 6, lines 55-57).

As to claim 16, Imai discloses that the emitter layer (55) comprises doped polysilicon (col. 7, lines 6-8).

Art Unit: 2826

As to claim 17, Imai discloses that an isolation layer (48)(col. 5, line 64) is arranged on the base-terminal layer, the emitter window extending through the isolation layer and through the base-terminal layer.

As to claim 18, Imai discloses shallow trench isolation regions (44) formed in the bipolar transistor.

As to claims 1-10, the device of Imai would necessarily have to be formed in order to function, so that the method comprising the means of forming the device is inherent in the device structure itself.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott R. Wilson whose telephone number is 571-272-1925. The examiner can normally be reached on M-F 8:30 - 4:30 Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

srw
April 13, 2005

TECHNOLOGY CENTER 2800
SUPERVISORY PATENT EXAMINER
NATHAN J. FLYNN